

*S. W. C. S.*

- c. driving a roller in the same direction as said casting belt, said roller being attached to said manifold downstream of said outlet and above said outlet such that said starting material passes between said roller and said belt;
- d. drawing the starting material from said chamber through the tandem movement of the roller and the casting belt in the same direction;
- e. dispensing a continuous sheet of material under pressure upon the casting belt as the belt is revolvingly driven; and
- f. cooling said continuous sheet of material on said casting belt.

#### REMARKS

Applicant has rewritten claims 1 and 7. Applicant has added claims 17-22.

In the Office Action, the Examiner rejected claims 1-15 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1 and 3-6 were rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over Driessen (4,790,242) in view of the Japanese reference (59,133) and Skovhage et al (4,976,981). Claims 7 and 9-16 were rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over Driessen (4,790,242) in view of Japanese reference (59,133). Claims 2 and 8 were rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over Driessen (4,790,242) in view of Japanese reference (59,133), as applied to claims 1 and 7 above, and further in view of Collins (4,815,370).

Reconsideration of this application is respectfully requested in view of the following remarks.

#### 35 U.S.C. § 112 Claim Rejections

As requested by the Examiner, Applicant has amended claims 1 and 7. The changes to these claims are shown in the attached Appendix with brackets for deleted matter and underlining for added matter. The amendments overcome the 35 U.S.C. § 112 rejections.

#### 35 U.S.C. § 103 Claim Rejections

##### Independent Claims 1, 7, And 16

Independent claim 1 was rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over Driessen (4,790,242) in view of the Japanese reference (59,133) and Skovhage et al (4,976,981). Similarly, independent claims 7 and 16 were rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over Driessen (4,790,242) in view of the Japanese reference (59,133).

However, for the reasons discussed below, there is no suggestion to combine these references, which in fact teach away from Applicant's invention. As a result, the claims are allowable and Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. § 103 claim rejections.

(A) The Cited References Teach Away From Applicant's Invention:  
Unlike Applicant's Invention, The Cited References Do Not  
Utilize A Pressurized Discharge Manifold

Applicant's invention utilizes a pressurized discharge manifold 11 which pumps in and discharges pressurized viscous material 15 (specification: page 11, lines 4-6), resulting in a smooth, uniform, pressurized exiting material, with the added benefit of alleviating blockage within the manifold. Conversely, the cited references do not disclose the use of a pressurized discharge manifold to discharge pressurized viscous material. For example, Skovhage et al. discloses an unpressurized vat 7 with an open end 20. Likewise, Driessen discloses an unpressurized chamber 12 with an open end (figure 12) through which a driven belt 61 enters. Similarly, the Japanese reference (59,133) discloses an unpressurized hopper 3 and the use of an auger (figures 1 and 2). As a result, the cited references teach away from Applicant's invention by discharging unpressurized material from the manifold. Combining the cited references, which would result in the discharge of unpressurized material from the manifold, would have the result of a less smooth, less uniform exiting material than Applicant's invention. Therefore, the combination of the cited references would defeat the purpose and advantages of Applicant's invention.

(B) The Cited References Teach Away From Applicant's Invention:  
Unlike Applicant's Invention, The Japanese Reference Is Designed For  
Dough Rather Than A Molten, Viscous Material

Applicant's invention is both designed and limited to an apparatus for processing molten, viscous material 15 (see claims 1-16). Conversely, the Japanese reference is designed

for dough 2, a semi-solid material which by definition must be stiff enough to knead. See Merriam-Webster's Collegiate Dictionary 348 (10<sup>th</sup> ed. 1999) (copy of page 348 attached). As previously discussed, applicant's invention utilizes a pressurized discharge manifold 11 which pumps in and discharges pressurized viscous material 15 (specification: page 11, lines 4-6), resulting in a smooth, uniform, pressurized exiting material, with the added benefit of alleviating blockage within the manifold. The use of a pressurized manifold 11 in conjunction with a molten, viscous material 15 is critical to applicant's invention. Applicant's invention would not function properly if it were used on a semi-solid material such as dough 2, which requires the use of an auger 4 as disclosed in the Japanese reference. The use of dough 2 in applicant's invention would clog up the manifold 11. As a result, the Japanese reference teaches away from combining it with Driessen and/or Skovhage et al.

(C) The Cited References Teach Away From Applicant's Invention: Combining The Cited References, Thereby Discharging Material Between Two Angled Surfaces, Would Defeat The Purpose And Advantages Of Applicant's Invention Which Discharges Material Between A Roller And A Flat Surface Resulting In A Smooth, Uniform Exiting Material

Applicant's invention discharges material 15 between a roller 16 and a flat belt 12 resulting in a smooth, uniform exiting material. Combining the roller 7 of the Japanese reference with Driessen, which utilizes a curved belt 61 on an angled idler drum 62 at the discharge point, would result in the material exiting between two angled surfaces thereby resulting in a less smooth, less uniform exiting material than Applicant's invention. As a result, the combination of the cited references would defeat the purpose and advantages of Applicant's invention.

Dependent Claims 2-6, And 8-15

The dependent claims 2-6, and 8-15 are allowable for the reasons stated above for independent claims 1, 7, and 16. Furthermore, limitations of these dependent claims further distinguish the claims.

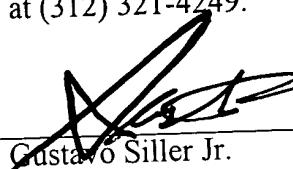
Added Claims 17-22

Applicants have added claims 17-22 adding further limitations to independent claims 1, 7, and 16. Claims 17-19 mimic independent claims 1, 7, and 16, with the further limitation of reciting a molten, viscous cheese material. Claims 20-22 mimic independent claims 1, 7, and 16, with the further limitation that the material is discharged under pressure.

Conclusion

Applicant respectfully submits that all of the pending claims are in condition for allowance and seeks early allowance thereof. If for any reason, the Examiner is unable to allow the application but believes that an interview would be helpful to resolve any issues, he is respectfully requested to call the undersigned at (312) 321-4249.

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## APPENDIX

1. (Twice Amended) An apparatus for forming a continuous sheet from a molten, viscous material comprising:

a pump connected to [said] an inlet to pump said molten, viscous material under pressure;

a discharge manifold, said manifold having a hollow interior chamber, said chamber having at least one inlet for receiving said molten, viscous material from said pump and a discharge opening on at least one side for discharging said molten, viscous material, and a roller;

a casting line positioned downstream of said discharge manifold and comprising an endless casting belt that transports said molten, viscous material upon said casting belt;

said endless casting belt mounted adjacent said manifold, said belt facing said discharge opening, said roller rotatably mounted adjacent said endless belt to form a gap between an outer surface of said roller and the surface of said belt and said manifold disposed such that said molten, viscous material is received in said gap from said discharge opening, said belt being revolving driven such that said molten, viscous material passes between said gap to form said continuous sheet of molten, viscous material therebetween, wherein said molten, viscous material cools on said belt; and

a first drive mechanism connected to said belt for causing said belt to revolve.

7. (Twice Amended) A manifold for forming a continuous sheet from a molten, viscous material upon a casting belt of a casting line positioned downstream of said manifold for transporting said molten, viscous material upon said casting belt moving in a first direction, wherein said molten, viscous material cools on said belt, said manifold comprising:

a roller positioned such that a longitudinal axis of said roller is perpendicular to the first direction of said casting belt;

[said casting line positioned downstream of said manifold for transporting said molten, viscous material upon said casting belt, wherein said molten, viscous material cools on said belt;]

a chamber, having an interior portion, disposed adjacent to said roller; said chamber having top, bottom, end, upstream and downstream face plates;

said bottom face open to the casting belt along at least a part of the length of  
    said bottom face;

        said downstream face open to the roller along at least a part of the length of  
        said downstream face;

        said top face having at least one inlet;

        said manifold being removably mountable mounted adjacent said casting belt  
        in at least one mounting area.

circumstances than to another; esp : a code of morals that applies more severe standards of sexual behavior to women than to men

**double star** *n* (1781) 1 : BINARY STAR 2 : two stars in very nearly the same line of sight but actually physically separate

**double-stop** *vb* (ca. 1889) : to produce two or more tones simultaneously (as on a violin) — **double-stop** *n*

**double sugar** *n* (1956) : DISACCHARIDE

**dou-blet** *n* [ME, fr. *double*] (14c) 1 : a man's close-fitting jacket worn in Europe esp. during the Renaissance 2 : something consisting of two identical or similar parts: as a : a lens consisting of two components; esp : a handheld magnifier consisting of two lenses in a metal cylinder b : a spectrum line having two close components c : a domino with the same number of spots on each end 3 : a set of two identical or similar things: as a : two thrown dice with the same number of spots on the upper face b : one of a pair; specif : one of microtubules found in cilia and flagella 4 : one of a pair, specif : one of two or more words (as *guard* and *ward*) in the same language derived by different routes of transmission from the same source

**double take** *vb* (1930) : a delayed reaction to a surprising or significant situation after an initial failure to notice anything unusual — usu used in the phrase *do a double take*

**double-talk** *n* (1936) 1 : language that appears to be earnest and meaningful but in fact is a mixture of sense and nonsense 2 : inflated, involved, and often deliberately ambiguous language — **double-talk** *v* — **double-talk-er** *n*

**double-team** *v* (1860) : to block or guard (an opponent) with two players at one time

**Double Ten** *n* [trans. of Chin (Beijing) *shuangshí*; fr. its being the tenth day of the tenth month] (1940) : October 10 observed by the Republic of China in commemoration of the revolution of 1911

**double-think** *n* (1949) : a simultaneous belief in two contradictory ideas

**double-time** *n* (1853) 1 : a marching cadence of 180 36-inch steps per minute 2 : payment of a worker at twice the regular wage rate

**double-ton** *n* [double + *ton* (as in *singleton*)] (ca. 1894) : two cards that are the only ones of their suit orig. dealt to a player — compare **SINGLETON** 1, **VOID** 4

**double-tongue** *n* (ca. 1900) : to cause the tongue to alternate rapidly between the positions for / and k so as to produce a fast succession of detached notes on a wind instrument

**double-u** *as* or *at* (1840) : the letter w

**double up** *v* (1789) : to share accommodations designed for one

**double vision** *n* (ca. 1860) : DIPLOPIA

**double whammy** *n* (1951) : a combination of two usu. adverse forces, circumstances, or effects

**double-wide** *n* (1970) : a mobile home consisting of two units which have been fastened together along their length

**doubloon** *n* [Sp *doblón*, aug. of *dobla*, an old Spanish coin, fr. L *dupa*, fem. of *duplicis* double — more at **DOUBLE**] (1622) : an old gold coin of Spain and Spanish America

**doubly** *adv* (15c) 1 : in a twofold manner 2 : to twice the degree

**doubt** *vb* [alter. of ME *douten*, fr. OF *douter* to doubt, fr. L *dubitare*; akin to L *dubius* dubious] *v* (13c) 1 *archaic* a : FEAR b : SUSPECT 2 : to be in doubt about (he ~s everyone's word) 3 a : to lack confidence in : DISTRUST *find myself ~ing him even when I know that he is honest* — H. L. Mencken b : to consider unlikely (I ~ if I can go) ~ vi : to be uncertain — **doubt-able** *v-dau-ta-bal* *adj* — **doubt-er** *n* — **doubt-ing-ly** *v-tip-lē* *adv*

**doubt** *n* (13c) 1 a : uncertainty of belief or opinion that often interferes with decision-making b : a deliberate suspension of judgment 2 : a state of affairs giving rise to uncertainty, hesitation, or suspense 3 a : a lack of confidence: DISTRUST b : an inclination not to believe or accept — *syn* see **UNCERTAINTY** — **no doubt** : !DOUBTLESS

**doubtful** *vb* (14c) 1 : giving rise to doubt: open to question (it is ~ that they ever knew what happened) 2 a : lacking a definite opinion, conviction, or determination (they were ~ about the advantages of the new system) b : uncertain in outcome 3 : marked by qualities that raise doubts about worth, honesty, or validity (of ~ reput) — **doubtfully** *v-ſa-ſe* *adv* — **doubt-ful-ness** *n*

**syn** DOUBTFUL, DUBIOUS. PROBLEMATIC, QUESTIONABLE mean not afford ing assurance of the worth, soundness, or certainty of something. DOUBTFUL implies little more than a lack of conviction or certainty (doubtful about whether I said the right thing). DUBIOUS stresses suspicion, mistrust, or hesitation (dubious about the practicality of the scheme). PROBLEMATIC applies esp. to things whose existence, meaning, fulfillment, or realization is highly uncertain (whether the project will ever be finished is problematic). QUESTIONABLE may imply no more than the existence of doubt but usu. suggests that the suspicions are well-grounded (a man of questionable honesty).

**doubting Thomas** *n* [St. Thomas, apostle who doubted Jesus' resurrection until he had proof of it (Jn 20:24-29)] (1883) : a habitually doubtful person

**doubt-less** *vad* (14c) 1 : without doubt 2 : PROBABLY

**doubt-less-adj** (14c) : free from doubt : CERTAIN — **doubt-lessly** *adv* — **doubt-less-ness** *n*

**douce** *vdiš* *adj* [ME, sweet, pleasant, fr. MF, fr. fem. of *douz*, fr. L *dulcis* sweet — more at *DULCET*] (1721) *archaic* 1 : SOBER, SEDATE (the ~ faces of the mourners — L. J. A. Bell) — **douce-ly** *adv*, **chiefly** *Scot*

**dou-cœur** *n* [F, pleasantness, fr. LL *dulcor* sweetness, fr. L *dulcis*] (1763) : a conciliatory gift

**douche** *vdiš* [F, fr. *doccia*, fr. *docciare* to douche, fr. *doccia* water pipe, prob. back-formation fr. *doccione* conduit, fr. L *ductio* means of conveying water, fr. *ducere* to lead — more at *TOW*] (1766) 1 a : a jet or current esp. of water directed against a part or into a cavity of the body b : an act of cleansing with a douche 2 : a device for giving douches 3 *Brit* : a rude awakening (the icy ~ (what he said about my work) — John Fowles) — **douche** *v*

**douche bag** *n* (ca. 1963) slang : an unattractive or offensive person

**dough** *vdiš* [ME *dogh*, fr. OE *dāg*; akin to OHG *teic* dough, L *tingere* to shape, Gk *teichos* wall] (bel. 12c) 1 : a mixture that consists essentially of flour or meal and a liquid (as milk or water) and is stiff enough

to knead or roll 2 : something resembling dough esp. in consistency

3 : MONEY 4 : **DOUGHBOY** — **dough-like** *v-lik* *adj*

**dough box** *n* (ca. 1944) : a rectangular wooden box mounted on wheels that is used as a worktable and storage space

**dough-boy** *vboi* *n* (1865) : an American infantryman esp. in the Civil War

**dough-face** *v-fas* *n* (1830) : a Northern congressman not originally sympathetic to the South during the Civil War; also : a Northern congressman who was originally sympathetic to the South during the same period — **dough-faced** *adj*

**dough-nut** *v-nut* *n* (ca. 1809) 1 : a small usu. ring-shaped fried in fat 2 : something (as a mathematical torus) that resembles a doughnut esp. in shape — **dough-nut-like** *v-lik* *adj*

**dough-ty** *vdaū-tei* *adj* **dough-tier** *-est* [ME, fr. OE *dohig* and OHG *touig* is useful, Gk *techein* to make] (bel. 12c) : marked by less resolution: **VALIANT** — **dough-tily** *vdaū-ti-ly* *adv* — **dough-tiness** *vdaū-tē-nas* *n*

**doughy** *vdo-ē* *adj* **dough-i-er** *-est* (1601) : resembling dough; not thoroughly baked b : unhealthy pale; **PASTY**

**Douglas fir** *n* [ca. 1830] [Scot. *botanica*] (1830) : any of several tall evergreen timber trees (genus *Pseudotsuga*) of the western U.S.

**Dou-kho-bor** *vdi-kɔ-ɔ-bɔr* *n* [Russ *dukhobor*, fr. *dukhoborts*] (1876) : a member of a Christian sect of 19th-century Russian origin emphasizing the duty of obeying the inner voice and rejecting church or civil authority

**do up** *v* (1666) 1 : to prepare (as by cleaning or repairing) for wear or use *(do up a shirt)* 2 a : to wrap up *(do up a package)* b : **PUT** 3 : to deck out: **CLOTHE** b : to furnish with something ornamental: **DECORATE** 4 : **EXHAUST, WEAR OUT**

**dour** *v-dūr*, *vdaū-ɔr* *adj* [ME, fr. L *durus* hard — more at **HARD**] (14c) 1 : **STERN, HARSH** 2 : **OBSTINATE, UNYIELDING** 3 : **GLUM, STONY** 4 : **DOUR-ADY** — **dour-ness** *n*

**dou-rou-cou-li** *v-dur-a-kü-lye* *n* [F, fr. an unidentified Amer Indian language of Venezuela] (1842) : any of several small nocturnal monkeys (genus *Aotus*) of tropical America that have round heads, large eyes, and densely furred bodies

**douse** *vdaū* also *dauz* *vb* doused; **dous-ing** (perh. fr. obs. Eng. *dousen* to smite) *v* (1600) 1 : to plunge into water 2 a : to throw a liquid on: **DRENCH** b : **SLOSH** 3 : **EXTINGUISH** (~ the lights) ~ vi : to become plunged into water — **dous-er** *n*

**douse** *vdaū* also *dauz* *n* (1881) : heavy drenching

**douse** *vdaū* also *dauz* *v* (1627) : **BLow, STRIKE**

**SLACKEN** (~ a rope) 2 : **TAKE OFF, DOFF**

**doux** *vdi* *adj* [F, lit., sweet, fr. *DOUZ* — more at **DOUCE**] (ca. 1913) : **of champagne** : very sweet

**dove** *vdaū* *n* [ME, fr. (assumed) OE *dafe*; akin to OHG *tido* gentle woman or child 3 : one who takes a conciliatory attitude and advocates negotiations and compromise; esp : an opponent of war or harmonious group or organization

**dove** *vdaū* past of **DIVE**

**dove-cote** *vdaū-kol*, *-kät* also **dove-cot** *v-kät* *n* (15c) 1 : a compartmented raised house or box for domestic pigeons 2 : a solid dove-kie *vdaū-kēv* *n* [dim. of *dove*] (1821) : a small short-billed dove var of **DAVEN**

**Dover sole** *n* [prob. fr. Dover, England] (ca. 1911) 1 : a common European sole (*Solea solea*) esteemed as a food fish, 2 : a brown blotted flatfish (*Microstomus pacificus*) of the Pacific coast of America that is a market fish in California

**Dover's powder** *vdo-vor-z* *n* [Thomas Dover †1742 Eng. physician] (1801) : a powder of ipecac and opium and used as a pain reliever and diaphoretic

**dove-tail** *vdaū-tāl* *n* (1573) : something resembling a dove's tail; esp : a flaring tenon and a mortise into which it fits tightly making an interlocking joint between two pieces (as of wood)

**dovetail** *v* (ca. 1656) 1 a : to join by means of dovetails b : to cut to a dove-tail 2 a : to fit skillfully to form a whole b : to fit together with ~ vi : to fit together into a whole

**dow** *vdaū* vi **dough** *vdaū* or **dowed** *vdaūd*, **dow-ing** (ME *dow*, *deih* have worth, am, able, fr. OE *deah*, *deag*; akin to OHG *touig*) (bel. 12c) *chiefly* *Scot* : to be able or capable

**Dow** *vdaū* *n* (1949) : **DOW-JONES AVERAGE**

**dow-a-ger** *vdaū-i-jar* *n* [MF *douagiere*, fr. *douage* dower, endow, fr. L *dolare*, fr. *dot*, *dot*, *dotis*, gift, dower — more at **DATE**] (13c) : a widow holding property or a title from her deceased husband

**dowsager's hump** *n* (1948) : an abnormal curvature of the upper back with round shoulders and stooped posture caused esp. by bone and anterior compression of the vertebrae in osteoporosis

**dowdy** *vdaū-dē* *n*, *pl* **dowd-ies** [dim. of *dowd* (dowdy)] (1581) *archaic* : a dowdy woman

**dowdy** *adj* **dowd-i-er**, *-est* (1676) 1 : not neat or becoming in appearance: **SHABBY** 2 a : lacking smartness or taste b : **FASHIONED** — **dowd-i-ly** *vdaū-dē-ly* *adv* — **dowd-i-ness** *n*

**dowdly** *n* [origin unknown] (1936) : **PANDOWDY**

**dowel** *vdaū-ɔ* *n* [ME *dowle*; akin to OHG *tubili* plug, L *ligare* to bind] (14c) 1 : a pin fitting into a hole in an abutting piece to prevent motion or slipping; also : a round rod or stick used esp. for fitting up into dowels 2 : a piece of wood driven into a wall so other pieces can be nailed to it